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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/538,311

02/21/2006

Stephen Temple

27754/25227

4060

4743

7590

02/05/2009

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EXAMINER

ALANKO, ANITA KAREN

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

02/05/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/538,311	<b>Applicant(s)</b> TEMPLE ET AL.	
	<b>Examiner</b> Anita K. Alanko	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11/18/08 - election.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4-6,9,11,15,20-46,48-71,74 and 75 is/are pending in the application.
- 4a) Of the above claim(s) 1,4-6,9,11,15,20-45,63-71,74 and 75 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 45-62 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/28/09; 6/9/05</u> .   | 6) <input type="checkbox"/> Other: _____                          |

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 45-46 48-50, 60-62 are rejected under 35 U.S.C. 102(e) as being anticipated by Shimada.

Shimada discloses a method of forming a component for an ink jet print head comprising the steps of:

- (a) providing a body 10 having a top surface (with patterned thermal oxide 102, Fig.4A),
- (b) forming a plurality of openings (inherent since repeated across the surface of the wafer) and extending into said body (by etching, Fig.4B), and
- (c) forming within each said opening an actuator structure (102,103,105, Fig.4C-4E), each said actuator structure remaining attached to said body during actuation.

As to claim 46, Shimada discloses that electrode 105 is patterned to isolate the actuators (Fig.4D).

As to claim 48, Shimada discloses to etch from the top surface (col.11, lines 31-34).

As to claim 49, Shimada discloses applying a mask (inherent in “ordinary photolithography step”, col.11, line 34) and forming a taper (see Fig.4B).

As to claim 50, Shimada discloses to form an electrode 103 to an inner surface of said opening.

As to claims 60-62, Shimada discloses to use sputtering (col.11, lines 39-55).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 51-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada in view of Takeuchi.

This discussion of Shimada from above is repeated here.

As to claims 51-57, Shimada fails to disclose forming the piezoelectric material 104 by using a suspension or slurry. Takeuchi teaches that it is conventional to form piezoelectric films with the use of a slurry or suspension (col.6, lines 33-36) with the advantage that they afford good piezoelectric operating characteristics. It would have been obvious to one with ordinary skill in the art to use a slurry or suspension as cited in the method of Shimada because Takeuchi teaches that to do is useful for forming piezoelectric materials with the expected advantage of affording good operating characteristics.

As to claims 58-59, Shimada fails to disclose forming the piezoelectric material 104 by using a flexible sheet. Takeuchi teaches other techniques of forming piezoelectric materials. The method of forming the material is thus not critical since the same final

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product is formed. It would have been obvious to use a sheet as cited in the method of Shimada because it is a functionally equivalent technique for forming piezoelectric materials and is expected to give the predictable result of a film with good operating characteristics.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K. Alanko whose telephone number is 571-272-1458. The examiner can normally be reached on Mon-Fri until 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anita K Alanko/  
Primary Examiner, Art Unit 1792

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